In the Claims:

1. (Original) A method of monitoring progression of a xenograft in a non-human host animal comprising:

(i) genetically modifying or engineering a cell before or after implantation into an animal so as to incorporate at least one reporter molecule and/or reporter gene and/or reporter agent into said cell;

(ii) implanting said modified cell into said host animal and allowing a xenograft to grow for a sufficient period of time; and

(iii) measuring at least one parameter of a selected biochemical/ physiological response associated with the reporter molecule or reporter gene.

2. (Currently Amended) The [[A]] method according to claim 1 wherein there is a plurality of genetically modified or engineered cells which are human or non-human in origin.

3. (Currently Amended) The [[A]] method according to ~~either preceding~~ claim 1 wherein the cell is a primary isolate derived from normal tissue or a tumour or is an immortalized ~~immortalised~~ or established cell line.

4. (Currently Amended) The [[A]] method according to ~~any preceding~~ claim 1 wherein the reporter molecule is selected from the group ~~comprising~~ consisting of a protein, an antigen, an enzyme, an enzyme substrate, a fluorescent agent, a chemiluminescent agent, a chromogenic agent ~~or~~ and a radionuclide.

5. (Currently Amended) The [[A]] method according to ~~any preceding~~ claim 1 wherein the reporter gene is selected from those genes encoding proteins chloramphenicol-acetyltransferase, β-galactosidase, β-glucuronidase, luciferase, beta-galactosidase or green fluorescent protein, secreted alkaline phosphatase (SEAP), major urinary protein (MUP) or human chorionic gonadotrophin (hCG).

6. (Currently Amended) The [[A]] method according to ~~any previous~~ claim 1 where the reporter agent is a protease or kinase or ~~where~~ the reporter is a protein or RNA effecting changes in protein or mRNA ~~stabilization~~ stabilization.

7. (Currently Amended) The [[A]] method according to ~~any preceding~~ claim 1 wherein the host animal is a rodent.

8. (Currently Amended) The [[A]] method according to claim 7 wherein the rodent is a mouse or rat.

9. (Currently Amended) The [[A]] method according to ~~either~~ claim 7 ~~or 8~~ wherein the rodent is a wild type or genetically engineered mouse or rat having a specifically selected genetic background.

10. (Currently Amended) The [[A]] method according to ~~any preceding~~ claim 1 wherein the host animal has more than one different population of reporter cells/system implanted therein.

11. (Currently Amended) The [[A]] method according to ~~any preceding~~ claim 1 wherein the step comprising measuring at least one parameter of a selected biochemical/ physiological response associated with the reporter molecule, ~~or~~ reporter gene or reporter agent is a qualitative or quantitative measurement and ~~may involve~~ optionally comprises invasive or non-invasive procedures ~~in order to ascertain such data~~ for making the measurement.

12. (Currently Amended) The [[A]] method according to ~~any preceding~~ claim 1 wherein the xenograft ~~is allowed to proliferate~~ proliferates as a xenograft ~~tumour~~ tumor with or without metastatic ~~tumours~~ tumors at secondary sites.

13. (Currently Amended) The [[A]] method according to ~~any preceding~~ claim 1 wherein the implanted modified cells are introduced into the host animal either as individual cells suspended in a suitable medium or as ~~tumour~~ tumor fragments.

14. (Currently Amended) The [[A]] method according to ~~any preceding~~ claim 1 wherein the implanted modified cells ~~are allowed to~~ grow in the host animal either systemically or as a xenograft ~~tumour~~ tumor at the site of implantation.

15. (Currently Amended) The [[A]] method according to ~~any preceding~~ claim 1 wherein the host animal is ~~either~~ (i) immunosuppressed by ~~means of~~ a method comprising administration of appropriate immunosuppressant agents, ~~or is of~~ (ii) an immunocompromised strain or ~~is~~ (iii) immunologically intact and wherein the implanted modified ~~cells are syngeneic~~ cell is synergistic with the host animal.

16. (Currently Amended) The [[A]] method according to ~~any preceding~~ claim 1 wherein the reporter cell/system is genetically engineered to express a transgene or multiple transgenes.

17. (Currently Amended) The [[A]] method according to ~~any preceding~~ claim 1 wherein the reporter cell/system expresses the reporter gene(s) or agent(s) at the time of implantation or is transfected *in vivo* with the reporter gene or agent in a specifically targeted manner.

18. (Currently Amended) The [[A]] method according to ~~any preceding~~ claim 1 wherein the reporter gene(s) or agent(s) comprise at least one element that ~~allow~~ allows measurement of a biochemical parameter in response to either changes in cell physiology occurring during reporter cell/system proliferation or as a result of toxicological or pharmacological effects of an administered xenobiotic-compound or biological substance.

19. (Currently Amended) The [[A]] method according to ~~any preceding~~ claim 1 wherein the step of measuring at least one parameter of a selected biochemical/ physiological response associated with the reporter molecule, ~~or~~ reporter gene or reporter agent comprises measuring or monitoring any one or more of the following parameters:

(a) reporter cell numbers, cell cycle modulation or mitotic fraction, cell differentiation, angiogenesis, hypoxia, cell death by necrosis, cell lysis or apoptosis;

(b) oxidative stress, DNA damage, mitochondrial function, membrane perturbation, GSH depletion, receptor-mediated toxicity, enzyme inhibition, cofactor availability, pH or osmotic change, perturbation of calcium homeostasis, cell differentiation, protein turnover, ubiquitination or protein misfolding;

(c) effects on intracellular signalling pathways, receptor interactions, effects on gene transcription, translation or protein stability, hormone or growth factor receptor modulation, peroxisome proliferator-activated receptor modulation, intracellular signal transduction pathways, MAP kinase or phosphatase signalling, p53 signalling or ras signalling; ~~and~~ or

(d) induction of drug resistance mechanisms, drug delivery or drug bystander effects.

20. (Currently Amended) The [[A]] method according to ~~any preceding~~ claim 1 wherein the reporter gene comprises a naturally occurring or artificial promoter sequence driving expression of a gene resulting in production of a reporter protein.

21. (Currently Amended) The [[A]] method according to claim 20 wherein the promoter is constitutively active or is inducible.

22. (Currently Amended) The [[A]] method according to ~~any preceding~~ claim 1 wherein the reporter gene expression ~~product(s) is/are~~ product is reportable transcriptionally or post-transcriptionally.

23. (Currently Amended) The [[A]] method according to claim 22 wherein transcriptional reporting is mediated by any one of the gene promoters selected from the ~~a~~ group ~~comprising,~~ consisting of vascular endothelial growth factor (VEGF), nitric oxide synthetase (iNOS) promoter, haemoxygenase-1 (HO-1) promoter, cyclo-oxygenase-2 (COX-2) promoter, transglutaminase promoter, Peg3/pwl promoter, 14-3-3 protein promoter ~~or~~ and a GADD153 promoter.

24. (Currently Amended) The [[A]] method according to claim 22 wherein post-transcriptional reporting is mediated through generation of a protein that can effect protein modifications[[, for example as]] selected from the group consisting of a consequence of protease activity that results in translocation of a cytoplasmic protein to the nucleus or from membrane-bound form to secreted form, ~~or through~~ protein cleavage, ~~or~~ activation of a proenzyme or transcription factor, ~~or~~ deactivation of an active enzyme or transcription factor ~~or in~~ and secretion into the blood or excretion into urine.

25. (Currently Amended) The [[A]] method according to claim 22 wherein post-transcriptional reporting is mediated through production of a protein or RNA that effects changes in the ~~stabilisation~~ stabilization of a protein or mRNA.

26. (Currently Amended) The [[A]] method according to claim 22 wherein post-transcriptional reporting is mediated through production of a protein which on death or lysis of the cell expressing it~~, is secreted or excreted, for instance alanine aminotransferase~~.

27. (Currently Amended) The [[A]] method according to ~~any preceding~~ claim 1 wherein measuring of at least one parameter of a selected biochemical/ physiological response associated with the reporter molecule or reporter gene or reporter agent ~~is by means of either~~ comprises a non-invasive or an invasive assay wherein:

(i) the non-invasive assay is in excreted body products, or by bioluminescence measurement, or by blood pressure measurement, or by transcutaneous oxygen tension measurement, or by nuclear magnetic resonance measurement or by positron emission tomographic measurement; or

(ii) an invasive assay for blood or xenograft reporter products.

28. (Currently Amended) The [[A]] product produced by the method of claim 1 and comprising a genetically modified or engineered cell, the modification or engineering of the cell being such that the cell comprises at least one reporter molecule or reporter gene.

29. (Canceled)

30. (Original) An artificial gene construct comprising a promoter region of the SFN gene and human chorionic gonadotrophin (hCG) such that expression of hCG is controlled by the SFN promoter.

31. (Original) A construct according to claim 30 wherein 5'-regulatory promoter region of the SFN gene is linked to hCG.

32. (Currently Amended) The [[A]] human ~~tumour~~tumor-derived cell line ~~containing~~ comprising the construct of ~~claims 30 or 31~~ claim 30.

33. (Currently Amended) The [[A]] non-human animal ~~containing~~ comprising a human ~~tumour~~tumor-derived cell line according to claim 32.

34. (Currently Amended) ~~Use of the~~ The method of claim 1 ~~or product of claim 28 or 30 in any one or more of the following situations~~ further comprising:

(a) measuring reporter cell proliferation, ~~particularly but not exclusively during xenograft growth or differentiation or death or~~ in response to treatments;

(b) determining the mechanism of differentiation or death where reporter cell differentiation or death occurs;

(c) monitoring processes in secondary metastatic ~~tumours where these may differ in their responses from the primary reporter cell xenograft~~ tumors;

(d) making non-invasive measurements of parameters related to biochemical processes in the reporter cell/system;

(e) identifying drug-resistant cell populations~~, for example arising from differential toxicity of a drug to dividing as compared to non-dividing cells or to hypoxic as opposed to normoxic cells~~;

(f) determining the effects of genetic background on ~~tumour~~ tumor cell growth or on response to treatments~~, for instance in cells expressing and not expressing p53~~;

(g) making dynamic measurements using reporter molecules or genes of short half lives or that are excreted; ~~and~~

(h) determining or confirming the targets of drug action *in vivo*; ~~and~~

(i) measuring drug bystander effects; and identifying promoter elements involved in gene regulation; ~~and~~

(j) determining intracellular drug concentrations and thereby those cells that take up a drug; and

(k) determining or confirming the targets of drug action *in vivo*.

35. (Currently Amended) A kit comprising a product with at least one reporter cell/system ~~as defined in either claim 28 or 29~~ of claim 28 and optionally a set of instructions ~~therefore~~ therefor.

36. (Currently Amended) The [[A]] kit according to claim 35 wherein the product is supplied as a suspension of reporter cells.